

# A REVISION OF THE GENUS *ANGRAECOPSIS*

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THE GENUS *Angraecopsis* was first proposed by Kraenzlin<sup>1</sup> in 1900 for a plant from Usambara in Tanganyika Territory, namely *A. tenerrima* Kraenzl. The author pointed out most of the distinctive characters of the genus, particularly the unequal sepals and the adnation of the laterals to the anticus part of the petals, though he seemed a little confused over the morphological status of the parts concerned. He also stated that there is a single viscidium, but this is clearly the result of faulty observation. Afterwards he appears to have rejected his own genus since he redescribed *A. tenerrima* in 1914 as a species of *Angraecum*.

In his comprehensive account of the Orchidaceae in "Die Orchideen" published in 1914, Schlechter<sup>2</sup> recognises the genus and adds three species to the original *A. tenerrima*. These were *A. parviflora* (Thou.) Schltr. from the Mascarene Islands, *A. ischnopus* (Schltr.) Schltr. from West Africa and *A. falcata* (Thunb.) Schltr. from Japan. He says little about the characters of the genus except to point out that the three-lobed lip separates it easily from *Aërangis* Rchb.f.

A few years later he gives a more complete treatment of the genus in his general revision of the Angraecoid Orchids<sup>3</sup>. In this the number of species has risen to seven,

<sup>1</sup> Engl. Bot. Jahrb. 28 (1900) 171.

<sup>2</sup> Die Orchideen (1914) 600-601.

<sup>3</sup> Beih. Bot. Centralbl. 36, Abt. 2 (1918) 139-141.

in spite of the fact that *A. falcata* has, quite properly, been removed to a separate genus, now known as *Neofinetia* Hu. Three of the added species are from West Africa, the fourth is from the Comoro Islands; all had been described some time previously, but had not been recognised as belonging to *Angraecopsis*.

The latest formal account of the genus is that of the Madagascar species by Perrier de la Bâthie<sup>4</sup>, in which five species are enumerated of which three are additions.

All these species have distinct viscidia to the pollinia in spite of any statements to the contrary, though in dried specimens the two viscidia, which often lie side by side, adhere to one another during drying and are difficult to separate on later examination.

Recently several orchids, which seem referable to *Angraecopsis* on general grounds, have been collected in different parts of East Africa. These species, however, all have a common viscidium to the two pollinia. It seems most suitable to include them in a distinct section of the genus.

Examination of all the above forms shows that, although they exhibit considerable diversity in many respects, there is a recognisable facies common to the whole genus, not only as regards the vegetative parts, but also in the floral structure. Characteristic external features are the short stem with a few somewhat oblique curved leaves, the relatively long slender inflorescences and the rather small or very small somewhat spidery flowers. In the latter the lateral sepals are characteristically longer than the intermediate, often somewhat spatulate and projecting together forwards in a parallel position. The petals are triangular, usually with the anticous margin dilated into a forward pointing lobe, the lower part of this being adnate to the base of the lateral sepal; often

<sup>4</sup> Humbert. Fl. Madag. Orchid. 2 (1941) 80-86.

the very acute apex is sharply reflexed so that it is not at first apparent. The lip is commonly trilobed but is almost entire in a few species; the spur has a narrow mouth, but is rather variable otherwise. The rather short acute rostellum projects forward or slightly downward; it is apparently variously cleft after the removal of the viscidia. It should be pointed out, however, that the flowers are rather small and the state of preservation of some of the species is not good enough to be certain of the exact details of the rostellar structure.

As a result of my investigations I now place the total number of recognised species at 14, of which three are newly described later in this paper. Since several of the species are very small plants it seems probable that there may yet be further similar species awaiting discovery; some of the mainland species have been gathered only in the past 20 years or so.

The affinity of *Angraecopsis* appears to be with *Mystacidium*, from which it differs in the unequal sepals, the characteristic petals, the normally 3-lobed lip, the narrow mouth to the spur and the side lobes of the rostellum not being papillose or pubescent.

**Angraecopsis Kraenzlin** in Engl. Bot. Jahrb. 28 (1900) 171—Schlechter, Die Orchideen (1914) 600–601, et in Beih. Bot. Centralbl. 36, Abt. 2 (1918) 139–141—H. Perrier de la Bâthie in Humbert, Fl. Madag. Orchid. 2 (1941) 80–86.

Herbae epiphyticae. *Caules* breves, usque ad 5 cm. longi, radices flexuosas simplices vel ramosas emittentes, superne paucifoliati. *Folia* disticha, saepius ligulata, sed interdum oblonga vel linearia, saepe  $\pm$  curvata. *Inflorescentiae* saepissime ex axillis foliorum delapsorum exortae, singulae vel plures, racemosae, pauci- vel pluri- (rarius multi-) florum, pedunculo saepius rhachide longiore.

*Flores* alternati, parvi vel rarius mediocres, albi virides vel flavo-virides, longiuscule pedicellati; bracteae parvae, basi vaginantes. *Sepala* inter se libera, lateralia quam intermedium saepius longiora  $\pm$  spathulata et parallela porrecta, interdum omnia sepala  $\pm$  patentia. *Petala* antice basi cum sepalis lateralibus adnata, saepe oblique triangularia apice reflexa. *Labellum* saepius medio vel infra medium trilobatum vel tripartitum, rarissime integrum, lobis lateralibus brevibus usque interdum intermedium superantibus; calcar ex ore angusto cylindricum vel apice  $\pm$  inflatum. *Columna* brevis, crassa, apice truncata; androclinium leviter excavatum; anthera  $\pm$  hemisphaerica, antice breviter producta; pollinia duo, sphaeroidea vel ovoidea, stipitibus duobus linearibus vel rarius superne dilatatis, viscidii distinctis vel rarius viscidio communi; stigma excavatum; rostellum breviter vel rarius longiuscule productum, saepius porrectum, viscidii amotis  $\pm$  2-3-lobatum vel partitum.

Species typica: *A. tenerrima* Kraenzlin.

#### Sectio 1. *Eu-angraecopsis* Summerhayes sect. nov.

Plantae parvae vel mediocres: pedunculus rhachidem aequans vel saepius longior; sepala valde inaequalia; petala triangularia vel fere dolabriformia margine antico valde dilatata, acuta; labellum trilobatum vel tripartitum, lobis lateralibus saepius linearibus vel ligulatis; polliniorum stipites pro rata longi, viscidii distinctis parvis.

Species 10, Africae tropicae et Insulae Mascarenarum indigenae.

Species typica sectionis: *A. tenerrima* Kraenzlin.

#### Sectio 2. *Cardiochilus* Summerhayes sect. nov.

Planta pusilla; pedunculus rhachide saepius brevior; rhachis fractiflexa; sepala inaequalia; petala elliptico-ovata, rotundata; labellum integrum, basi leviter cordatum; polliniorum viscidia distincta.

Species unica sectionis, Africae tropicae indigena: *A. pusilla* Summerhayes.

Sectio 3. *Coenadenium* Summerhayes sect. nov.

Plantae parvae; pedunculus rhachidem aequans vel brevior; sepala  $\pm$  inaequalia; petala ovata vel lanceolata, margine antico vix dilatata, subacuta; labellum trilobatum vel integrum, lobis lateralibus brevibus dentiformibus; polliniorum viscidium commune, pro rata magnum, stipites saepius geniculatim conniventes.

Species 3, Africae tropicae orientali indigenae.

Species typica sectionis: *A. breviloba* Summerhayes.

KEY TO SPECIES

Pollinia with 2 separate stipites and viscidia

Petals triangular or broadly triangular with the anticus margin much dilated, adnate to the lateral sepals along the lower anticus margin, apex acute usually sharply reflexed

Spur 2.5 cm. or more long; relatively large plants with ligulate leaves 7–20 cm. in length; lip distinctly trilobed; petals markedly triangular; lateral sepals  $\pm$  spathulate, much longer than the dorsal sepal; peduncle long, flowers about 6–12, spaced out rather laxly along the rhachis

Lateral lobes of lip from slightly shorter to slightly longer than the middle lobe, broad and obscurely lobulate at the apex; petals much broader than long; spur 5–6.5 cm. long; leaves usually from 1.5–2.5 cm. broad, narrower in small individuals . . . . . 2. *tenerrima*

Lateral lobes of lip much shorter and narrower than the middle lobe, quite entire; petals about as long as broad; spur 2.5–4.5 cm. long; leaves usually 7–15 mm. broad, rarely broader . . . . . 3. *gracillima*

Spur less than 2 cm. long, usually much shorter

Lateral lobes of lip well developed, never less than half the length of the middle lobe

Spur shorter than the lip, much swollen at the apex; lateral lobes of lip about as long as or longer than the middle lobe; petals slightly longer than broad, 1-nerved; lateral

sepals not markedly spatulate; small plants with leaves up to 8 cm. long

Spur nearly 4 mm. long; rhachis about equalling the peduncle, 6-17-flowered; lateral sepals 4.5-5.5 mm. long; leaves broadly ligulate, 6-10 mm. broad

7. *dolabriformis*

Spur about 2 mm. long; rhachis shorter than the peduncle, 6-7-flowered; lateral sepals 3.5-4.5 mm. long; leaves linear, 2-6 mm. broad . . . . . 8. *tridens*

Spur longer, often much longer, than the lip, usually not much swollen at the apex

Petals broader than long (length measured from apex to base of central vein)

Leaves small, elliptical-lanceolate or oblong, up to 5 cm. long and 12 mm. broad; inflorescences 4-6 cm. long; rhachis about as long as peduncle, about 5-7-flowered; lateral lobes of lip slightly longer than the middle lobe; spur about twice as long as the lip, not at all swollen . . . . . 1. *ischnopus*

Leaves large, strap-shaped, 20-35 cm. long, 2.5-3.25 cm. broad; inflorescences at least 10 cm. long, rhachis much shorter than peduncle, 10-20-flowered; lateral lobes of lip distinctly shorter than middle lobe; spur longer than the lip, swollen at the apex

4. *macrophylla*

Petals longer than broad

Leaves broadly strap-shaped or elliptical-oblong, scarcely curved, 10-24 mm. broad; petals 3-nerved

Leaves elliptical-oblong, 4-10 cm. long, 10-24 mm. broad, with two slightly unequal rounded lobes at the apex; inflorescences up to 15 cm. long, rhachis 2-4.5 cm. long, 7-13-flowered; lip about 4.5 mm. long, lateral lobes much shorter and narrower than the middle lobe, spur 5-8 mm. long 5. *elliptica*

Leaves broadly strap-shaped, 9-15 cm. long, 11-22 mm. broad, unequally lobed at the apex; inflorescences 12-22 cm. long, rhachis 4-9 cm. long, 10-25-flowered; lip about 6.5 mm. long, lateral lobes nearly as broad and as long as the middle lobe, spur about 16 mm. long . . . . . 6. *trifurca*

Leaves narrowly strap-shaped, usually somewhat

- curved, up to 18 cm. long but only 4–12 mm. broad, acute or very unequally lobed at the apex with the shorter lobe usually tooth-like; petals 1-nerved; inflorescences up to 17 cm. long, rhachis short, 1–3.5 cm. long, up to 12-flowered; lip less than 4 mm. long, lateral lobes distinctly shorter than the middle lobe, spur 6–9 mm. long . . . . . 9. *parviflora*
- Lateral lobes of lip very small, spreading; flowers very small (dorsal sepal 2 mm. long); lip more or less cruciform with very short side lobes and thickened apex; spur longer than the lip, much swollen at the apex; leaves ligulate, 2 cm. long, 4–7 mm. broad . . . . . 10. *Pobeguinii*
- Petals rounded ovate, anticous margin scarcely dilated, adnate to lateral sepals for a short distance at the base; lip entire, broadly ovate, truncate or slightly cordate at the base; spur slightly longer than the lip; leaves linear, 1.5–5 cm. long, 1.5–5 mm. broad; rhachis  $\pm$  zigzag, flowers 5–10 mm. apart . . . . . 11. *pusilla*
- Pollinia with 2 separate stipites but a common viscidium; petals not much differentiated from the dorsal sepal, only shortly adnate to the lateral sepals
- Lip quite entire or with very obscure rounded side lobes, broadly ovate, spur about 2 cm. long; stipites of pollinia long and slender, not geniculate, viscidium convex, ovate; leaves ligulate, up to 9 cm. long and 1 cm. broad . . . . . 12. *holochila*
- Lip with distinct acute tooth-like side lobes about or below the middle, linear and very fleshy, spur 12 mm. long or less; stipites of pollinia short and thick, geniculately connivent, viscidium oblong; dorsal sepal 3–4 mm. long; leaves very small, usually less than 2.5 cm. long
- Spur scarcely inflated in the apical part, 10–12 mm. long; side lobes at or just below the middle of the lip . . . . . 13. *amaniensis*
- Spur markedly inflated in the apical part, about 4.5 mm. long; side lobes well below the middle of the lip . . . . . 14. *breviloba*

## ENUMERATION OF SPECIES

### Section 1. *Eu-angraecopsis* Summerhayes

This section contains all the species in which the characteristic features of the genus are best developed. In particular the long more or less spathulate forward-

projecting lateral sepals give the flower a distinct and readily recognised facies. The species vary from small plants with a few leaves about 3–4 cm. long up to the imposing *A. macrophylla* in which the strap-shaped leaves reach a total length of 35 cm. These are very reminiscent of the leaves in certain species of *Chamaeangis* and *Diaphananthe*.

1. **Angraecopsis ischnopus** (*Schltr.*) *Schlechter*, Die Orchideen (1914) 601, et in Beih. Bot. Centralbl. 36, Abt. 2 (1918) 140 — Summerhayes in Hutchinson & Dalziel, Fl. West. Trop. Afr. 2 (1936) 462.

*Angraecum ischnopus* Schlechter in Notizbl. Bot. Gart. Berlin 4 (1905) 170.

SIERRA LEONE: Loma Mountains, E. slope of Mt. Bintumane, Oct. 1944, *Jaeger* 289.

FRENCH GUINEA: Nimba Mountains, in mountain forest, Sept. 1947, *Schnell* 3729; same locality, Oct. 1947, *Schnell* 3851.

BRITISH CAMEROONS: Buea, *Deistel* (TYPE).

This species is characterised by the broad petals, these being considerably broader than long, and the rather long slender spur. The rhachis is about the same length as the peduncle, the few flowers being spaced out at relatively long intervals. The Sierra Leone specimen is in fruit only, but appears to be correctly placed in this species.

2. **Angraecopsis tenerrima** *Kraenzlin* in Engl. Bot. Jahrb. 28 (1900) 171 — Schlechter in Beih. Bot. Centralbl. 36, Abt. 2 (1918) 141.

*Angraecum tenerrimum* Schlechter in Engl. Bot. Jahrb. 38 (1906) 164.

*Angraecum amaniense* Kraenzlin in Engl. Bot. Jahrb. 51 (1914) 396.

TANGANYIKA TERRITORY: East Usambara Mountains, Ngwelo (Nque-lo) Forest, June 1899, *Scheffler*; Amani, *Braun* 3211; Ndola, 960 m.

alt., evergreen forest, May 1950, *Verdcourt & Greenway* 216; Kwamkuyu Falls, 840 m. alt., on rock scarp by waterfall, Jan. 1931, *Greenway* 2845; Mahenge Distr., Muhulu Mountains, 1200 m. alt., in mist forest, Feb. 1932, *Schlieben* 1844.

This and the next species, *A. gracillima* (Rolfe) Summerh., may be distinguished from all other species by the long spur, which reaches a length of 2.5–6.5 cm. *A. tenerrima* has the longest spur in the genus, from 5–6.5 cm. in length, and may also be distinguished from *A. gracillima* by the nature of the lateral lobes of the lip. In the present species these are as long as the middle lobe and almost parallel-sided to the apex which is often obscurely lobed or bluntly toothed, whereas in *A. gracillima* the lateral lobes are shorter, often much shorter, than the middle lobe and quite entire at the apex.

**3. *Angraecopsis gracillima* (Rolfe) Summerhayes**  
in Kew Bull. (1937) 465.

*Mystacidium gracillimum* Rolfe in Kew Bull. (1913) 144 — Schlechter in Beih. Bot. Centralbl. 36, Abt. 2 (1918) 126.

BELGIAN CONGO: Between Masisi and Walikale, 1300 m. alt., in transition forest, March 1932, *Lebrun* 5156; Kamatembe, Bishakishaki River, N.W. of Mt. Nyamlagira, April 1934, *De Witte* 1516; Nyamlagira, Kanamaharagi Lava, 1600 m. alt., in sclerophyllous vegetation, Feb. 1945, *Germain* 3599; Goma, by Lake Kivu, in lava plains, 1650 m. alt., in forest, March 1948, *Purseglove* 2616.

UGANDA: Toro District, 1800 m. alt., in forest, flowered Botanic Gardens, Entebbe, May 1939, *Chandler* 2792; Ankole District, Lake Lutoto, flowered Busingiro, Sept.–Oct. 1944, *Eggeling* 5470; Mengo District, Mabisa Forest, July 1908, *Brown* 444 (? Iso-TYPE); Masaka District, South Buddu, *Fyffe* 184; Mbale District, Mt. Elgon, Tracey Falls, 1650 m. alt., July 1917, *Snowden* 505; Mt. Elgon, 1800 m. alt., in forest, June 1924, *Snowden* 902.

KENYA COLONY: North Kavirondo District, Kakamega-Kaimosi Forests, 1500 m. alt., flowered Nairobi Sept. 1938, *Cunningham-Van Someran* 47; Kakamega Forest, 1200 m. alt., April 1938, *Van Someran* (Coryndon Museum no. 8411); same locality, 1650 m. alt., in forest, Aug. 1942, *Tweedie* 590; South Kavirondo District, Kisii, 1500 m.

alt., *Napier* (Coryndon Museum no. 6355); Kericho District, Sotik, Kipsonoi River, 1500 m. alt., *Gray*; Chepalungu Forest, 1800 m. alt., on dead *Acacia* in grassland, *Honoré* 2544.

Evidently widely spread in the East African forest regions. The differences between this and *E. tenerrima* Kraenzl. are given under that species and in the key. The leaves are normally narrower in this species, but one gathering from the Belgian Congo (*Lebrun* 5156) has leaves as broad as those of *E. tenerrima*.

4. **Angraecopsis macrophylla** *Summerhayes* sp. nov. affinis *A. gracillimae* (Rolfe) Summerh., a qua foliis multo majoribus, inflorescentiis densifloris, calcari plus duplo brevior apice inflato satis differt.

Herba epiphytica; caulis brevis, usque ad 5 cm. longus, decurvatus, inferne radices flexuosus ramosas verrucosas 1–2 mm. diametro emittens, superne paucifolius. *Folia* omnia pendentia, ligulata,  $\pm$  curvata, basi leviter angustata, apice valde inaequaliter bilobulata, lobulo brevior brevissimo vel fere nullo, lobulo longior usque ad 2 cm. longo, obtuso vel subacuto, in toto 15–35 cm. longa, 1.5–3.5 cm. lata, subcarnosa, dorso leviter carinata, pallide viridia; vagina 2–3 cm. longa, compressa, siccitate striata. *Inflorescentiae* ex axillis foliorum delapsorum exortae, patentes vel  $\pm$  dependentes, circiter 15 cm. longae, simpliciter racemosae; pedunculus teres, 11–12 cm. longus, 1–1.5 mm. diametro, vaginis circiter 5 dissitis arctis acutis dorso carinatis usque ad 5 mm. longis instructus; rhachis quam pedunculus paulo crassior, leviter fractiflexa, 2.5–3.5 cm. longa, dense usque ad 20-flora; bracteae breviter ochreateae, triangulares, acutae, 1–2 mm. longae. *Flores* patentes, de colore nil constat; pedicellus cum ovario fere 1 cm. longus. *Sepalum* intermedium erectum, late oblongo-ovatum, apice rotundatum, convexum, circiter 2.5 mm. longum et 2

mm. latum; sepala lateralia subspathulato-ligulata, incurvata, parallele porrecta, circiter 5.5 mm. longa et superne 1.75 mm. lata; omnia sepala trinervia. *Petala* oblique triangularia, margine antico valde dilatata sepalo laterali adnata, apice angustata, acuta, dimidio superiore reflexa, 2.5 mm. longa, basi 2.8 mm. lata, subtrinervia. *Labellum* basi utrinque angulatum, superne trilobatum, 5.5 mm. longum; lobus intermedius oblongus, sursum sensim angustatus, obtusus, 2.5 mm. longus, 1 mm. latus; lobi laterales divergentes, lineari-oblongi, apice subacuti, 1.25 mm. longi, 0.6 mm. lati; calcar valde circinatim incurvatum, ex ore angusto cylindricum, apice clavato-inflatum, obtusum, circiter 1 cm. longum. *Columna* leviter incurvata, semiteres, fere 2 mm. longa, apice truncata; androclinium leviter excavatum; anthera hemisphaerica, antice in appendicem obtusam producta; pollinia ellipsoidea, 0.6 mm. longa, stipitibus linearibus superne subspathulato-dilatatis 0.8 mm. longis, viscidiiis distinctis oblongis convexis 0.8 mm. longis; rostellum productum, obtusum, viscidiiis amotis trifidum; fovea stigmatica orbicularis; ovarium circiter 2.5 mm. longum, leviter 6-sulcatum.

UGANDA: Bunyoro, Budongo Forest, Siba block, by stream, June 1944, flowered Busingiro, July 1944, *Eggeling 5386* (TYPE).

This species is easily recognisable on account of the very large leaves. In floral structure it resembles *A. gracillima* (Rolfe) Summerh., but has a much shorter clavate spur. An interesting feature is the widening of the claw of the lip just in front of the spur opening to produce two rounded angles which may be looked upon as the ends of the decurrent sides of the column, though there is no true foot in this genus.

5. **Angraecopsis elliptica** *Summerhayes sp. nov.*  
affinis *A. trifurcae* (Rehb.f.) Schltr., sed foliis anguste

vel oblongo-ellipticis apice minus inaequilobatis, inflorescentiis brevioribus, floribus minoribus, labelli lobis lateralibus quam intermedio satis minoribus, calcar brevior differt.

Herba epiphytica, radicibus exceptis glaberrima. *Caulis* brevis, usque ad 3 cm. longus, inferne radices flexuosas ramosas pubescentes 2–3 mm. diametro emittens, superne circiter 4-foliatus. *Folia* disticha, recurvatim patentia; vagina compressa, siccitate multistriata, 1–1.5 cm. longa; lamina anguste vel elongato-elliptica, apice paulo inaequaliter bilobulata, lobulis rotundatis vel obtusis longiore vix 5 mm. longo, 4.5–10.5 cm. longa, 1.7–2.5 cm. lata, supra secus medium canaliculata, subtus leviter carinata, subcarnosa. *Inflorescentiae* ex axillis foliorum delapsorum exortae, simpliciter racemosae, 10–15 cm. longae, subdense usque ad 13-florae; pedunculus gracilis, teres, 8–10 cm. longus, vaginis paucis arctis acutis 3–4 mm. longis instructus; rhachis levissime fractiflexa; bracteae ochreatae, apice acutae, usque ad 2 mm. longae. *Flores* incurvatim adscendentes, virides, hyalini; pedicellus cum ovario circiter 5 mm. longus. *Sepalum* intermedium erectum vel leviter incurvatum, lanceolato-ovatum, acutum, circiter 2.25 mm. longum et 1.25 mm. latum, trinervium; sepala lateralia parallele porrecta, oblique et incurvatim oblanceolata, circiter 4.75 mm. longa et 1.5 mm. lata, subquadrinervia. *Petala* triangularia, margine antico rotundato-dilatata sepalo laterali adnata, apice acuminata reflexa, circiter 2.25 mm. longa, basi 2 mm. lata, trinervia. *Labellum*  $\pm$  incurvatum, ex ungue oblongo trilobatum, 4.5 mm. longum; lobus intermedius lineari-lanceolatus, acutus, circiter 2.75 mm. longus, basi 0.75 mm. latus; lobi laterales lineares, divergentes, 1.6 mm. longi, basi 0.25 mm. lati; calcar cylindricum, incurvatum, apice haud inflatum, circiter 5 mm. longum. *Columna* brevis, crassa, circiter 1.25 mm. longa, apice

truncata; androclinium leviter excavatum; anthera non visa; pollinia ellipsoideo-globosa, 0.5 mm. longa, stipitibus linearibus 0.3 mm. longis, viscidiiis distinctis quadratis minutis; rostellum breviter productum, viscidiiis amotis breviter bidentatum; ovarium leviter 6-sulcatum, circiter 2.5 mm. longum.

BRITISH CAMEROONS: Buea, 900 m. alt., 1947, *Gregory 194* (TYPE).

Chiefly recognisable by the relatively broad oblong-elliptical leaves. In floral structure it is nearly related to the Comoro Islands *A. trifurca* (Rchb.f.) Schltr. It is a larger plant than either of the other three species from this general region (*A. ischnopus* (Schltr.) Schltr., *A. dolabriformis* (Rolfe) Schltr. and *A. tridens* (Lindl.) Schltr.) and may also be distinguished by the details of the flowers. A specimen collected by J. W. Purseglove (no. 2614) at Goma near Lake Kivu in the Belgian Congo, is probably also referable to this species, but the plants are considerably smaller and unfortunately none of the flowers is preserved completely.

6. **Angraecopsis trifurca** (*Rchb.f.*) *Schlechter* in Beih. Bot. Centralbl. 33, Abt. 2 (1915) 428 et in Beih. Bot. Centralbl. 36, Abt. 2 (1918) 141 — ? Perrier de la Bâthie in Humbert, Fl. Madag. Orchid. 2 (1941) 82.

*Aëranthus trifurcus* Reichenbach filius in Flora 68 (1885) 540.

*Mystacidium trifurcum* Durand & Schinz, Consp. Fl. Afr. 5 (1895) 55.

*Listrostachys trifurca* Finet in Mém. Soc. Bot. France 9 (1907) 51, ? *excl. descr. et ic.*

*Mystacidium Thouarsii* Finet, l.c. 57, *quoad descr. et ic., excl. syn. et plantae Mauritanianae et Borbonicae.*

*Angraecopsis Thouarsii* H. Perrier in Humbert, Fl. Madag. Orchid. 2 (1941) 84, *excl. syn.*

*A. comorensis* Summerhayes in Kew Bull. (1949) 443.

COMORO ISLANDS: Grande Comore, *Humblot 450* (TYPE in Herb. Vienna); Grande Comore, June 1899, *Pobéguin*.

Comparison of the type of *Aëranthus trifurcus* Rchb.f. in the Vienna Herbarium (*Humblot 450*) with the material collected by *Pobéguin* and described by *Perrier de la Bâthie* as *Angraecopsis Thouarsii* shows that they are conspecific. The petals in the *Reichenbach* type are trinerved, while the side lobes of the lip are nearly as broad and not quite so long as the middle lobe, just as in the *Pobéguin* specimens.

I am rather puzzled as to the true nature of the material in the Paris Herbarium under the same number as the type, *Humblot 450*, which was figured and described by both *Finet* and *Perrier*. These drawings and descriptions clearly do not agree with the type specimen at Vienna, and it is therefore possible that *Humblot* collected a mixture of species under his number 450. An alternative explanation is that both French authors have placed too much dependence on the drawings of the artist *C. Kastner* which appear in both *Finet's* plates and as parts of *Perrier de la Bâthie's* illustrations. Examination of drawings by this artist on sheets of other species in the Paris Herbarium shows that they are sometimes highly imaginative and do not agree with my dissections of flowers from the same plants. It seems therefore possible that the drawings on the sheet of *Humblot 450* are also inaccurate and have led to a misinterpretation of the material; clearly a re-examination of this specimen is desirable.

7. ***Angraecopsis dolabriformis* (*Rolfe*) *Schlechter*** in *Beih. Bot. Centralbl.* 36, Abt. 2 (1918) 140 — *Dandy* in *Excell, Cat. Vasc. Pl. S. Tomé* (1944) 335.

*Mystacidium dolabriforme* *Rolfe* in *Bolet. Soc. Broter.* 9 (1891) 141 et in *Dyer, Fl. Trop. Afr.* 7 (1897) 175

— Durand & Schinz, Consp. Fl. Afr. 5 (1895) 52 —  
Henriques in Bolet. Soc. Broter. 27 (1917) 183.

*Angraecum dolabriforme* Engler in Engler & Drude  
Veget. der Erde 9, bd. 2 (1908) 419.

SAO TOME: no locality, *Henriques*, cult. in Hort. Coimbra in 1889  
and in Herb. Kew (TYPE).

This and the next species (*A. tridens* (Lindl.) Schltr.)  
are clearly closely allied and further material may show  
that they are conspecific. *A. dolabriformis* has broader  
leaves, more flowers in the inflorescence, slightly larger  
flowers and a longer spur than *A. tridens*, but it remains  
to be seen if these are valid distinctions or merely rep-  
resent plants of different degrees of robustness.

8. **Angraecopsis tridens** (Lindl.) Schlechter in  
Beih. Bot. Centralbl. 36, Abt. 2 (1918) 141 — Summer-  
hayes in Hutchinson and Dalziel, Fl. West Trop. Afr.  
2 (1936) 462.

*Angraecum tridens* Lindley in Journ. Linn. Soc.  
Lond. Bot. 6 (1862) 136.

*Listrostachys tridens* Reichenbach filius in Flora 48  
(1865) 190 — Durand & Schinz, Consp. Fl. Afr. 5  
(1895) 50.

*Epidorchis tridens* O. Kuntze, Rev. Gen. Pl. (1891)  
660.

*Saccolabium occidentale* Kraenzlin in Engl. Bot. Jahrb.  
17 (1893) 57.

*Angraecum occidentale* Rolfe in Dyer, Fl. Trop. Afr.  
7 (1897) 142.

*Mystacidium tridens* Rolfe, l.c. 174.

*Angraecopsis occidentalis* Schlechter in Beih. Bot. Cen-  
tralbl. 36, Abt. 2 (1918) 140.

BRITISH CAMEROONS: Cameroon Mt., W. of Buea, 1240 m. alt., in  
primeval forest, Sept. 21st 1891, *Preuss* 965.

FERNANDO Po: no locality, 1200 m. alt., Dec. 1860, *Mann* 646  
(TYPE).

The distinctions between this and *A. dolabriformis* (Rolfe) Schltr. are mentioned under that species. Both species are characterised by the short inflated spur.

9. **Angraecopsis parviflora** (*Thou.*) *Schlechter*, Die Orchideen (1914) 601 et in Beih. Bot. Centralbl. 33, Abt. 2 (1915) 428 et l.c. 36, Abt. 2 (1918) 140 — Perrier de la Bâthie in Humbert, Fl. Madag. Orchid. 2 (1941) 85.

*Angraecum parviflorum* Thouars, Orch. Iles Austr. Afr. (1822) t. 60 — A. Richard, Orch. Iles France & Bourbon (1828) 70 — Bojer, Hort. Maurit. (1837) 317. *Aërobion parviflorum* Sprengel, Syst. Veg. 3 (1826) 718.

*Oeceoclades parviflora* Lindley, Gen. & Sp. Orch. Pl. (1833) 236.

*Listrostachys parviflora* S. Moore in Baker, Fl. Maurit. Seych. (1877) 355 — Durand & Schinz, Consp. Fl. Afr. 5 (1895) 49.

*Epidorchis parviflora* O. Kuntze, Rev. Gen. Pl. (1891) 660.

*Saccolabium parviflorum* Cordemoy, Fl. Ile Réunion (1895) 197.

*Mystacidium pedunculatum* Rolfe in Dyer, Fl. Trop. Afr. 7 (1897) 175.

TANGANYIKA TERRITORY: Kyimbila District, N. of Lake Nyasa, *Stolz K. 51*.

NYASALAND: Mt. Milanji, 1200 m. alt., *McClounie 29*; Manganja Mts., Mt. Chiradzulu, Sept. 1861, *Meller*.

PORTUGUESE EAST AFRICA: Makua Country, Namuli Mts., *Last*.

SOUTHERN RHODESIA: Umtali District, Vumba, Norseland, 1500 m. alt., in kloof forest, March 1949, *Wild 2799* (S. Rhodesian Gov. Herb. No. 22724); Melsetter District, Lucite Valley, 1200 m. alt., Feb. 24th 1907, *Johnson 175*.

MADAGASCAR: Manongarivo Mts., 1000 m. alt., in forest, March 1909, *Perrier 1947*.

MAURITIUS: no locality, *Thouars 30* (TYPE); *Grey*; *Bojer*; *Commer-son* (according to Bojer the species occurred in forests on the Pouce and Pieter. Both mountains and at Plaines-Wilhems).

REUNION: Mont St. François, S. of St. Denis, *Richard* 507; no locality, *Richard* 406; *Boivin* 1060; *Herb. Drake* (common at St. Benoit according to Cordemoy).

Careful examination and comparison of all these specimens indicate that they are referable to the same species. The specimens from the African mainland are on the whole larger than those from Mauritius and Réunion, but there is practically no difference between the smallest mainland plants and the largest island specimens. In floral structure there is very close agreement, at any rate as regards the two Southern Rhodesian gatherings of which I have seen well preserved flowers.

Finet<sup>5</sup> provides a description and figures of two gatherings (*Sacleux* 764 and 765) from Portuguese East Africa which he identifies with Rolfe's *Mystacidium pedunculatum*. Although there are no properly preserved flowers on Rolfe's material, in several cases the spur still remains. This, even allowing for shrinkage, could not possibly have exceeded 1 cm. in length and was probably nearer 7 mm., which is about the length of the spur in *Angraecopsis parviflora*. On the other hand the flowers figured by Finet have a spur which appears, from the magnifications given, to be about 2 cm. long with quite a wide mouth. This certainly does not agree with the shrivelled-up spurs on the capsules of *M. pedunculatum*. It therefore seems almost certain that *Sacleux*'s plants are referable to a different species, which is correctly placed in *Mystacidium*, with which they agree in floral structure, especially the lip and rostellum-lobes.

It should be further pointed out that in no true species of *Mystacidium* are the flowers bunched at the end of the inflorescence with a long peduncle below, but are spaced out evenly along the greater part of the inflorescence so that the peduncle is comparatively short. In

<sup>5</sup> Mém. Soc. Bot. France 9 (1907) 57, t. XII, fig. 1-12.

*Angraecopsis*, on the other hand, a long slender peduncle is a very common occurrence, the flowers being closely placed along the comparatively short rhachis. All this evidence supports the view that the original *Mystacidium pedunculatum* of Rolfe is correctly referred to *Angraecopsis parviflora* and has nothing to do with the plants figured under the same name by Finet.

*A. parviflora* is clearly related to *A. trifurca* and *A. elliptica* as regards the floral structure; the differences between the species are indicated in the key.

10. **Angraecopsis Pobeguini** (*Finet*) *Perrier de la Bâthie* in Humbert, Fl. Madag. Orchid. 2 (1941) 81, fig. LI, 1-7.

*Rhaphidorhynchus Pobeguini* Finet in Mém. Soc. Bot. France 9 (1907) 41, t. VII, fig. 46-54.

*Chamaeangis Pobeguini* Schlechter in Beih. Bot. Centralbl. 33, Abt. 2 (1915) 426 et l.c. 36, Abt. 2 (1918) 111.

COMORO ISLANDS: Grande Comore, June 14th 1899, *Pobéguin* (TYPE in Herb. Paris).

This species is easily recognisable by the small flowers and the very short side lobes to the lip. These stand out almost at right angles so that the whole lip appears cross-shaped; the apex of the middle lobe is much thickened and fleshy.

In the original description and illustrations of the species the two pollinia are shown as possessing a common stipes and viscidium. I was not able to discover the pollinarium on examining a flower on the type specimen, but I very much doubt the accuracy of Finet's account in this respect. One wonders if the imagination of the artist, C. Kastner, is again here in evidence, as suggested under *A. trifurca*. In this connection it may possibly be significant that Perrier de la Bâthie does not reproduce

the drawings of the pollinarium, though all the other dissections from the type sheet appear on his plate; neither does he mention the common stipes and viscidium in his specific or generic descriptions. Instead he points out that the two stipites and viscidia are sometimes coalescent; I can confirm that this happens in dried material of many species of the genus, though the viscidia are clearly distinct in fresh or alcohol material.

## Section 2. *Cardiochilus* Summerhayes

This section contains only one species, a small insignificant plant with narrow leaves and few-flowered lax inflorescences of small greenish-white flowers. In this section the petals are only slightly differentiated from the dorsal sepal and the line of attachment to the lateral sepal is very short. The entire broadly ovate lip with slightly cordate base is also a characteristic feature. Nevertheless, the combination of characters present seems to link the plant most closely with *Angraecopsis* of which, however, it is clearly an aberrant species.

### 11. *Angraecopsis pusilla* Summerhayes sp. nov.

Herba epiphytica nana, tota usque ad 7 cm. alta. *Caulis* erectus, brevis, usque ad 2 cm. longus, inferne radices flexuosas carnosas glabras emittens, superne crebre 5–9-foliatus. *Folia*  $\pm$  erecta vel adscendentia; vagina compressa, 5–8 mm. longa, siccitate pluricostata; lamina linearis vel lineari-ligulata, apice inaequaliter bilobulata lobulo brevior fere nullo longiore rotundato, 1.5–5 cm. longa, 1.5–5 mm. lata, sectione leviter V-formis, carnosula. *Inflorescentiae* ex axillis foliorum exortae, graciles, superne laxae 4–7-florae; pedunculus gracilis, teres, 1–3 cm. longus, vaginis perpaucis arctis acutis usque ad 4 mm. longis instructus; rhachis gracilis, fractiflexa; bracteae lanceolatae, dimidio inferiore vaginantes, apice acutae, 1.5–2.5 mm. longae, extra carinatae. *Flores*

5–10 mm. distantes, erecto-patentes, albi, viridi-tincti; pedicellus cum ovario 5–8 mm. longus, gracilis. *Sepalum* intermedium leviter incurvatum, convexum, orbiculari-ovatum, apice obtusissimum, circiter 1.75 mm. longum et paulo angustius quam longius, subtrinervium; sepala lateralia subspathulatim oblanceolata, curvata, apice obtusa, circiter 2.75 mm. longa et 1 mm. lata, uninervia. *Petala* late oblique elliptico-ovata, apice rotundata, margine antico paulo dilatata sepalo laterali adnata, circiter 2 mm. longa et 1.6 mm. lata, binervia, nervis ramosis. *Labellum* concavum, late ovatum, apice subacutum, basi truncatum vel leviter cordatum, 2.5 mm. longum, explanatum circiter 2 mm. latum, trinervium; calcar fere rectum, ex ore angusto cylindricum, sursum sensim angustatum, apice rotundatum, circiter 2.75 mm. longum. *Columna* fere recta, brevis, crassa, subteres, 1 mm. longa; androclinium leviter excavatum; anthera hemisphaerica, antice brevissime producta; pollinia sphaeroidea, circiter 0.3 mm. diametro, stipitibus duobus linearibus polliniis brevioribus, viscidiiis duobus distinctis ellipticis parvis; rostellum incurvatim porrectum, viscidiiis amotis indivisum; ovarium plurisulcatum, circiter 1.75 mm. longum.

BELGIAN CONGO: Parc National Albert, between Nyamlagira and Tsambene, 1700 m. alt., in forest, Jan. 16th 1945, *Germain 3432* (TYPE in Herb. Brussels).

Described from both dried and alcohol material. Possibly with a wider distribution in the upper forests of the Central African mountain region, but easily overlooked on account of its small size and insignificant flowers.

### Section 3. *Coenadenium* Summerhayes

The species of this section are characterised by the possession of a common viscidium to the two pollinia, though the stipites are distinct. Apart from the pollinarium, the species exhibit the characteristic *Angrae-*

*copsis* floral facies more clearly than the species in the last section, though not so markedly as the species of sect. *Eu-angraecopsis*. They are all small plants with rather short inflorescences in which the rhachis occupies the upper half or more, the peduncle being comparatively short. All the species are natives of East Tropical Africa.

**12. *Angraecopsis holochila* Summerhayes** in Bot. Mus. Leaflet. Harvard Univ. 12 (1945) 115.

UGANDA: Karamoja District, Napak, 2250 m. alt., in ravine forest, May 28th 1940, *Thomas 3646* (TYPE); same locality, 2190–2250 m. alt., on trees and rocks, June 1950, *Eggeling 5971*.

Characterised by the almost entire lip and relatively long spur. The large ovate very convex viscidium is truncate and slightly emarginate in front; the stipites arise laterally, are almost straight or slightly curved and in length much exceed the diameter of the pollinia. Further material in alcohol collected recently by Dr. W. J. Eggeling has confirmed in all respects the striking features of this delightful little species.

**13. *Angraecopsis amaniensis* Summerhayes** in Bot. Mus. Leaflet. Harvard Univ. 11 (1945) 259.

*A. tenuicalcar* Summerhayes, l.c. 258.

KENYA COLONY: Mt. Elgon, south side, 2160 m. alt., in *Podocarpus* forest, April 1943, coll. E. W. Carroll, comm. *E. M. Tweedie 603*.

TANGANYIKA TERRITORY: West Usambara Mts., Shume, edge of forest, March 25th 1942, *Moreau 325*; East Usambara Mts., Amani, 900 m. alt., on exotic conifers, July 4th 1941, *Moreau 68* (TYPE).

Since describing the above two species, I have seen further material, including flowers in alcohol of *Moreau 325*. This additional material shows that, firstly, the supposed difference in the thickness of the spurs of the two species is non-existent and, secondly, the relative lengths of the lateral and intermediate sepals are very variable, intermediates occurring between the conditions described

in my original accounts. It therefore seems more logical to look upon the various gatherings as forms of one species, the general floral structure and especially the column showing very close agreement.

14. **Angraecopsis breviloba** *Summerhayes* in Bot. Mus. Leaflet. Harvard Univ. 11 (1945) 256.

KENYA COLONY: Mgong, 1800 m. alt., in forest, May 7th 1934, *C. Van Someran* (Coryndon Mus. No. 3653); same locality and altitude, May 1932, *Mainwaring 1858* (Coryndon Mus. No. 3104); Ngong and Langata Forest, 1800 m. alt., in dense shade on *Acokanthera Schimperii*, April–May 1950, *Piers 2*; North Nyeri District, Nyeri, Thego River, March–April 1941, *Copley 26*; Tana River basin, steppes of the Thika-thika, July 16th 1893, *Gregory*.

TANGANYIKA TERRITORY: Mondul, W. of Arusha, 1800 m. alt., May 6th 1942, *Moreau 304* (TYPE); Mbulu, June 7th 1942, *Moreau 304A*; Kilimanjaro, Marangu, 1350 m. alt., in riverain forest, Nov. 27th 1941, *Moreau 107*; Lolbene Mt., 50 miles S. of Moshi, in forest, coll. F. M. Page-Jones, cult. and flowered Amani, April 10th 1944, *Moreau 815*.

This and the previous species have the short stipites of the pollinia geniculately incurved so that the pollinia lie close to one another. The viscidium is more or less rectangular with the front and back rounded-truncate. The present species may be distinguished from *A. aman-iensis* by the shorter much inflated spur.

SPECIES REJICIENDA

*Angraecopsis Boutoni* (Rchb.f.) Perrier de la Bâthie in Humbert, Fl. Madag. Orchid. 2 (1941) 82.

*Angraecum Boutoni* Reichenbach filius, Otia Bot. Hamburg. (1881) 117.

Examination of the type specimen of this species shows that it is not an *Angraecopsis* at all, but a *Chamaeangis* closely allied to, if not identical with, *C. Hariotiana* (Kraenzl.) Schltr. I am refraining, however, from making a new combination in *Chamaeangis*, as I am not certain of the correct specific epithet for the species concerned.